

**\*ARMY Declass/Release Instructions On File\***

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PROTOCOL OFFICE  
U. S. ARMY ORDNANCE MISSILE COMMAND  
REDSTONE ARSENAL, ALABAMA

SCHEDULE 1

31 October 1961

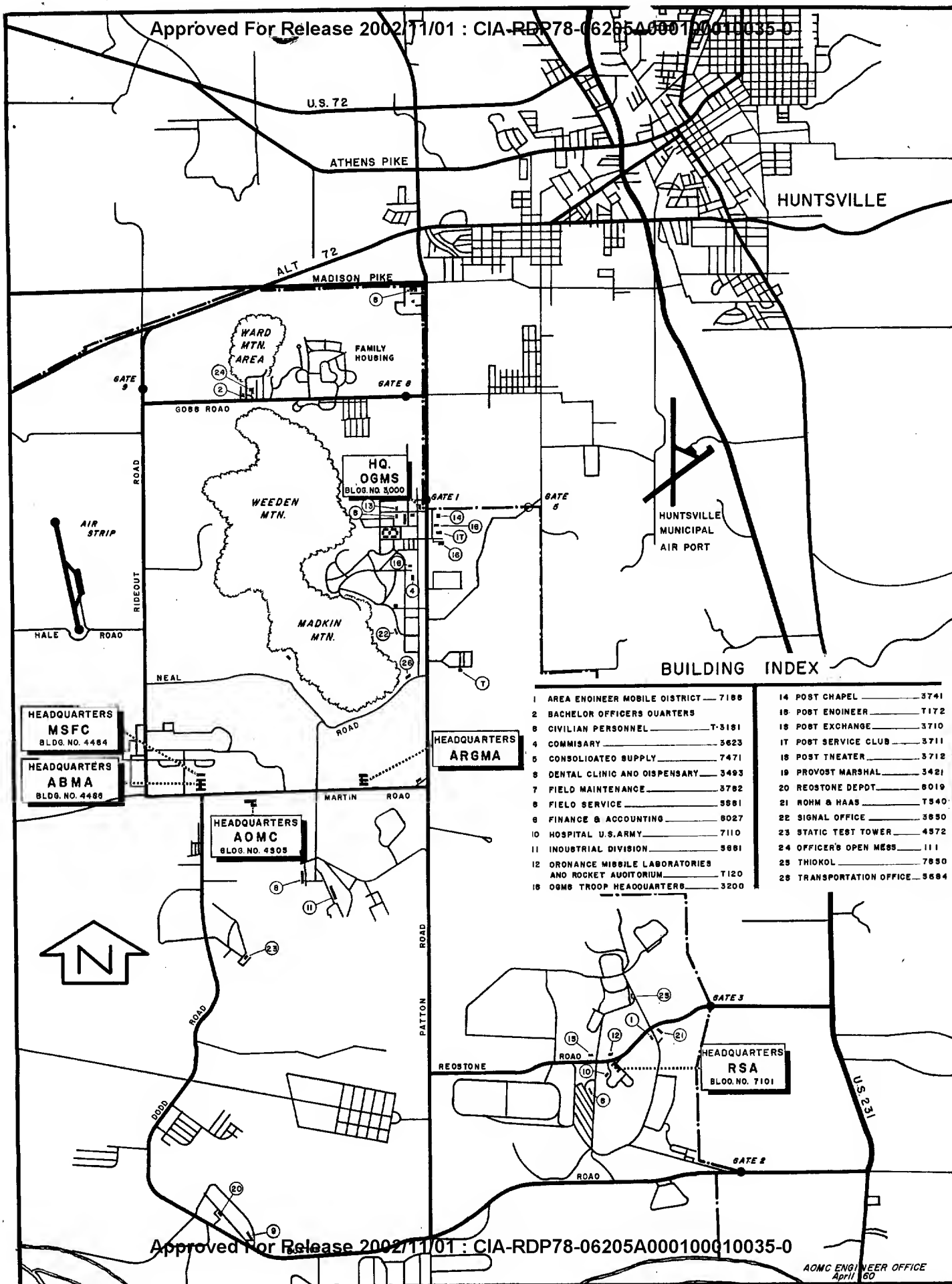
GROUP: Special Group  
SIZE: Twenty-one (21)  
DATE: 31 October - 2 November 1961

PROJECT OFFICER: Mr. Duckett/876-5536  
PROGRAM COORDINATOR: Sgt. Justin/876-1015

<u>TIME</u>	<u>ACTIVITY</u>	<u>PLACE</u>	<u>PERSON RESPONSIBLE</u>
<u>31 Oct 61</u>			
1600	Arrival	Huntsville Airport	Sgt. Justin/876-1015
1600-1630	Travel to Holiday Inn		Protocol Office/876-1015
<u>1 Nov 61</u>			
0745-0815	Travel		Protocol Office/876-1015
0815-0945	Tour Thiokol	Bldg. 7650	Lt. Harris/876-8715
0945-1000	Travel		Protocol Office/876-1015
1000-1100	Tour Pershing Test Stand		Mr. Ramsden/876-6414
1100-1110	Travel		Protocol Office/876-1015
1110-1150	Tour Pre-Flight Lab	Bldg. 7290	Lt. Harris/876-8715
1150-1200	Travel		Protocol Office/876-1015
1200-1300	Lunch	Cafeteria Bldg. 5250	Lt. Harris/876-8715
1300-1315	Travel		Protocol Office/876-1015
1315-1400	Tour Advanced Component Tech's Lab	Bldg. 7441	Lt. Harris/876-8715
1400-1415	Travel		Protocol Office/876-1015
1415-1445	Tour Nike Branch	Bldg. 3301	Capt. Gay/876-2517
1445-1450	Travel		Protocol Office/876-1015
1450-1525	Tour FAM Division	Bldg. 3303	Lt. Col. Gilbert/876-3025
1525-1530	Travel		Protocol Office/876-1015
1530-1600	Tour Hawk Branch	Bldg. 3307	Capt. Hayden/876-2622

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<u>TIME</u>	<u>ACTIVITY</u>	<u>PLACE</u>	<u>PERSON RESPONSIBLE</u>
1600-1615	Travel		Protocol Office/876-1015
1615-1730	Social Hour	Officer's Club	Capt. Schorsten/877-4341
1730-1750	Travel to Motel		Protocol Office/876-1015
<u>2 Nov 61</u>			
0745-0810	Travel to MSFC		Protocol Office/876-1015
0810-0840	Tour Fabrication Division		Mr. Milwee/876-0378
0840-0850	Travel		Protocol Office/876-1015
0850-0930	Tour G&C Division		Mr. Cordes/876-5437
0930-0940	Travel		Protocol Office/876-1015
0940-1010	Tour S&M Division		Mr. Flynn/876-5335
1010-1020	Travel		Protocol Office/876-1015
1020-1050	Tour Test Division		Mr. Dodd/876-1312
1050-1100	Travel		Protocol Office/876-1015
1100-1130	Discussion with Mr. Duckett	Bldg. 4505	Mr. Duckett/876-5536
1130-1200	Travel to Huntsville Airport		Protocol Office/876-1015
1200	Departure		



*Welcome to*

REDSTONE ARSENAL

*home of*

The United States

Army Ordnance Missile Command

Army Ballistic Missile Agency

Army Rocket & Guided Missile Agency

Army Ordnance Missile Support Agency

Army Ordnance Guided Missile School





Headquarters, U. S. Army Ordnance Missile Command

The U. S. Army Ordnance Missile Command, with headquarters at Redstone Arsenal, is the nerve center of the Army's missile program.

Commanded by Major General August Schomburg, AOMC is responsible for weapon systems management; this includes the design, development, production, maintenance, and supply for Army missiles and rockets. The Command is also responsible for some aspects of training Army ground forces and Army air defense units in the use of the weapon systems.

Currently, AOMC is weapon systems manager for 19 missile programs and has secondary responsibilities for two major related programs. The Army Ordnance Missile Command makes use of the most advanced resources in missile technology available through other Army Ordnance installations, private industry, and research institutions in carrying out its mission. Although approximately 90 per cent of all work in Army missiles and missile systems components is done by private contractors, the Army maintains a broad scope of "in-house" technical competence in order to monitor, supervise, and expedite contractor efforts at a competent level. Currently engaged in work with the Army's missile program are 41 prime contractors, 298 first tier, and 53,780 subcontractors. The Command also deals with 60 other government agencies, including other branches of the Armed Forces.

Because of the broad scope of the mission, the Army Ordnance Missile Command is organized into a Headquarters and four major elements; the Army Ballistic Missile Agency, Army Rocket and Guided Missile Agency, Army Ordnance Missile Support Agency, and White Sands Missile Range.



A B M A

The Army Ballistic Missile Agency, commanded by Brigadier General Richard M. Hurst, is responsible for the management of the Army's ballistic missiles and free-flight rockets; this includes research and development, testing, procurement, and field support.

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The weapon systems which ABMA manages include REDSTONE, JUPITER, PERSHING, SERGEANT, CORPORAL, HONEST JOHN, LITTLE JOHN, M-72 ROCKET GRENADE, and Missiles A and B. JUPITER was developed by ABMA and is deployed by the Air Force.

ABMA supervises industrial contractors working with ABMA-managed missile systems, maintains testing facilities, and supports field units using the weapon systems.

The Army Ballistic Missile Agency pioneered the Army's early space efforts, launching the Free World's first scientific satellite of the earth on January 31, 1958, and the first Free World satellite of the sun on March 3, 1959.



#### ARGMA

The Army Rocket and Guided Missile Agency, commanded by Brigadier General John G. Zierdt, is responsible for the research, development, procurement, test and evaluation, supply, and maintenance of all Army guided missiles and rockets which can be maneuvered after being launched.

The weapon systems for which ARGMA has responsibility are HAWK, NIKE AJAX, NIKE HERCULES, NIKE ZEUS, REDEYE, MAULER, SHILLELAGH, SS-10, and FABMDS (Field Army Ballistic Missile Defense System). ARGMA also has supporting responsibilities in the development of TARGET missiles.

More than 20,000 acres of the Arsenal are devoted to Research and Development Operations of the Agency which includes four of the most up-to-date laboratories in the Ordnance Corps today. The Test and Evaluation Laboratory, for example, has the most complete laboratory in the Free World for environmental testing of hazardous items. The T & E Lab also operates a range which permits flight testing of smaller rockets and static testing of larger solid propellant rocket motors.

In conjunction with the development and testing of the NIKE ZEUS anti-missile missile system, ARGMA has personnel spread over half the world, from Kwajalein Atoll in the Pacific to Ascension Island in the Atlantic.

#### AOMSA

The Army Ordnance Missile Support Agency, commanded by Colonel Thomas W. Cooke, in addition to several assigned missions, provides logistical and administrative support to the Army Ordnance Missile Command.

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Logistical and administrative support includes facilities, transportation, communications, utilities, maintenance and other services. In addition to elements of AOMC, AOMSA supports the Ordnance Guided Missile School, Air Force Units satellited on the Post, the Marshall Space Flight Center, and private contractors located on the reservation.

A major function of the Army Ordnance Missile Support Agency is its National Missions. AOMSA operates a Missile and Rocket Inventory Control Center (MRICC), Computation Center, Calibration Laboratories, and an Army Missile Patent Center. As an example, of the National Missions, the MRICC supports AOMC weapons systems management. It handles all routine supply activities, data processing for all Ordnance Depots responsible for missile and rocket components, and is the national control center for all stock and stock levels of common production items maintained at these depots.

All regular functions of the Post are under the direction of the AOMSA Commander. This includes Troop Command, Post Engineers, Post Surgeon, Signal Division, Quartermaster, Transportation, and Purchasing and Contracting Division. Housing, special services, recreational, and educational facilities for military personnel are the responsibility of AOMSA.

#### W S M R

White Sands Missile Range, an element of AOMC commanded by Major General John G. Shinkle, located in the Tularosa Basin in South-central New Mexico, is one of the largest inland missile test ranges in the Free World. WSMR provides range instrumentation, schedules, and supervises tests and is responsible for range safety in flight testing Army missiles and rockets. WSMR also provides an independent field testing laboratory for other branches of the Armed Forces.

The giant inland missile test range covers 4,000 square miles; facilities are valued at \$150 million.



#### U. S. ARMY ORDNANCE GUIDED MISSILE SCHOOL

The Ordnance Guided Missile School, commanded by Colonel Charles W. Eifler, Commandant, at Redstone Arsenal is an element of the Ordnance Training Command. The school was established in December 1952 and has graduated over 22,000 students from the Army, Navy, Air Force, Marine Corps, and 12 allied nations.

Now the third largest educational institution in Alabama, OGMS operates around the clock with two shifts a day devoted to instruction and a third to maintenance. With its ultra modern \$65 million campus and faculty of approximately 600 instructors, OGMS trains some 5,000 students annually in the Army's operational missile systems and the Air Force Jupiter IRBM.

OGMS maintains one of the most complete educational television facilities operated by the Armed Forces and pioneered the use of large television screens, measuring as much as 12 by 20 feet, to increase and retain student interest in complex missile subjects. Courses are regularly transmitted through OGMS facilities to other training centers. Using unequalled research and development facilities at Redstone Arsenal, the school regularly transmits courses to other training centers and supplies special reports by video tape to the Department of Defense and national network of missile contractors.

As the Army's only school devoted entirely to missile training, OGMS prepares most of the missile text books and training aids used throughout the Army, printing some 500,000 pages of classroom materials each month.

When students complete individual classes, they are formed into numbered Ordnance Support units for deployment throughout the Free World.

#### ARSENAL COMPLEX

Redstone Arsenal, one of eight Permanent Ordnance Installations, is a combination of two U. S. Army arsenals established in 1941 for the production of chemical shells. Today it is the home of the U. S. Army Ordnance Missile Command, Army Ballistic Missile Agency, Army Rocket and Guided Missile Agency, Army Ordnance Missile Support Agency, Ordnance Guided Missile School, Marshall Space Flight Center, and several private contractor firms conducting rocket and missile research.

The Chemical Warfare Service began a \$70 million installation at Huntsville in 1941, to manufacture chemical mortar and howitzer shells. It was called Huntsville Arsenal.

In October 1941, the Ordnance Corps began a \$20 million construction program for the Redstone Ordnance Plant. This plant assembled explosives for the chemical shells and produced completed rounds. It was redesignated Redstone Arsenal on February 26, 1943. Redstone Arsenal was located to the east and Huntsville Arsenal to the west of Patton Road which splits the vast government reservation.

Approximately 20,000 people were employed by both installations at the peak of production during World War II. Employment was sharply curtailed at the end of hostilities and, from September 1945 until February 1947, the primary mission here was the renovation of Ordnance ammunition received from overseas.

In late February 1947, Redstone Arsenal was placed on standby as a reserve arsenal. Employment at both the Chemical and Ordnance installations dropped to a force of about 250 caretakers, guards, and firemen. The Chemical Corps offered its arsenal for sale.



During the summer of 1948 an extensive survey of all Ordnance installations was made to find suitable land and facilities to permit activation of a rocket center for the Army's expanding missile activities. The Chief of Ordnance designated Redstone Arsenal as the center of research and development activities in the field of rockets and related items in October 1948. The Chemical Corps deactivated Huntsville Arsenal in January 1949 and its land and facilities were transferred to Redstone Arsenal.

Recruitment of technical and professional personnel began in January 1949 and a Research and Development Division was established in February. Redstone Arsenal was declared an active installation by the Department of the Army on June 1, 1949.

The Redstone Division of Thiokol Chemical Corporation moved into government-owned buildings which formerly housed ammunition loading lines. Rohm and Haas Chemical Company personnel arrived in June. Both Thiokol and Rohm and Haas were involved in basic rocket propellant research.

In April 1950, the Army's rocket experts who had been working at Fort Bliss, Texas, were moved to Redstone Arsenal. The group included the team of scientists and engineers headed by Dr. Wernher von Braun.

In March 1952, Ordnance elements from Aberdeen Proving Ground came to Redstone Arsenal to establish the Provisional Redstone Ordnance School. The first training program in the maintenance and repair of guided missiles opened March 10, 1952. It consisted of seven officers. The present Ordnance Guided Missile School was established in December 1952.

The Army Ballistic Missile Agency was created February 1, 1956, to field the Redstone Missile as rapidly as possible and to develop the 1,750-mile Jupiter intermediate range ballistic missile. Both the Redstone and the Jupiter performed vital missions in the Army's early space efforts. Approximately 4,800 employees of ABMA who worked under the technical direction of Dr. Wernher von Braun on the Redstone and Jupiter and the Army's space program were transferred to the National Aeronautics and Space Administration in July 1960.

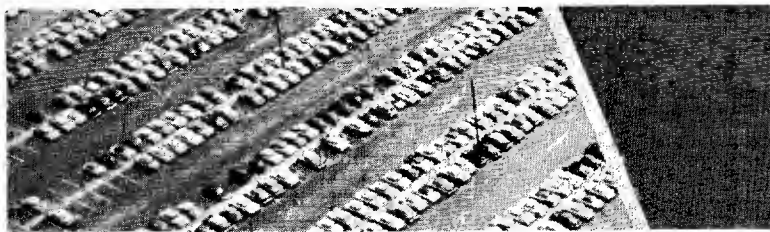
The U. S. Army Ordnance Missile Command was established March 31, 1958, consolidating under one commander all Army activities, except OGMS, having a major role in the Army rocket and missile program. The Army Ballistic Missile Agency was designated to manage the Army's ballistic missiles and free-flight rockets; the Army Rocket and Guided Missile Agency was designated the responsibility for the Army's guided or maneuverable missiles and rockets.

The Army Ordnance Missile Support Agency provides buildings, facilities, and services, and supports AOMC and its elements, OGMS, and contractor firms.

Redstone Arsenal is a "city within a city;" its 38,781 acres cover 60.6 square miles which include three minor mountain ranges. There are some 94 miles of railroads, more than 260 miles of roads, and approximately 2,175 buildings on the post. There is a modern airstrip that will accommodate large carrier-type aircraft; dock facilities are maintained on the Tennessee River which marks the southern boundary.

Military, civilian, and contractor personnel at Redstone Arsenal total approximately 23,000. Salaries and wages paid during the past fiscal year amounted to over \$139,000,000. The value of land, buildings, and facilities has been estimated at \$225,000,000.

More than 37,000 automobiles of employees are registered with the Provost Marshal for access to the Arsenal. Gate guards issued passes during 1960 to more than 160,000 visitors, including personnel on official temporary duty here from other commands and contractor employees.



Eighty-five per cent of the employees at Redstone Arsenal come to work in car pools or by other transportation sharing arrangements. Only 60 per cent of the employees live within a 15-mile radius of their jobs. Sixteen per cent live within a 16 to 25 mile radius, 20 per cent within 26 to 50 miles, and four per cent drive more than 50 miles - - one way - - to work each day.

Redstone is no longer simply an arsenal, in the literal sense. It has become an internationally recognized center of research engineering, development, and education in the missile field.



The Army's Missiles

**REDSTONE** - Surface-to-surface inertially guided ballistic missile immune to known enemy countermeasures. It is a liquid fueled missile and can deliver a nuclear warhead on targets up to 200 miles distance. The Redstone is deployed with troops overseas. A modified Redstone was the first stage of the Jupiter C, used to launch the first Free World scientific satellite.

**JUPITER** - Surface-to-surface liquid fueled intermediate range ballistic missile with nuclear capabilities. Developed by the Army, Jupiter is now deployed by the Air Force and was the first Free World IRBM to be successfully launched. Jupiter, with a range of 1,750 miles, was the largest weapon for which the Army had development responsibility. A modified Jupiter served as the first stage of the JUNO II space vehicle with which the Army launched the first Free World satellite of the Sun.

**PERSHING** - Surface-to-surface all-inertially guided ballistic missile. It utilizes a powerful two-stage solid propellant rocket motor and is capable of delivering nuclear warheads on targets deep in the enemy's rear areas. Pershing is a highly accurate and reliable weapon system and, utilizing a mobile transporter-erector-launcher, it can be moved into an unprepared site, erected, and fired in a matter of minutes. It is both ground and air transportable. Pershing will replace the Army's famous Redstone missile.

**CORPORAL** - Surface-to-surface liquid fueled, inertially guided ballistic missile. It has both conventional and nuclear warhead capabilities and a range of 75 miles. Corporal was the Army's first operational ballistic missile system and is deployed with troops in Europe.

**SERGEANT** - Surface-to-surface inertially guided ballistic missile. It utilizes a powerful solid propellant rocket motor and can carry either conventional high-explosive or nuclear warheads. Sergeant is a highly accurate missile system, mounted on a mobile erector-launcher which can be towed by standard Army vehicles. Easy to handle and simple to maintain and fire, Sergeant was designed to replace the operational Corporal.

**HONEST JOHN** - Surface-to-surface Artillery Rocket for close support of ground combat operations. The weapon is a free-flight rocket utilizing a solid propellant rocket motor and no guidance or electronic controls. It has both conventional and nuclear warhead capabilities and a range of approximately 10 miles. The missile has large fins at the rear to stabilize it in flight.

**LITTLE JOHN** - Surface-to-surface solid propellant free-flight Artillery Rocket. It is capable of delivering conventional and nuclear warheads on targets beyond 10 miles in range. Little John is the Army's most advanced free-flight rocket and can be moved on the ground and by fixed wing aircraft or helicopter. It is designed to be deployed in the field similar to conventional artillery.

**M-72 ROCKET GRENADE** - Man-portable, man-fired "bazooka" type light anti-tank weapon. The M-72 is fired by the individual soldier from the shoulder in a standing, kneeling, or prone position. The throw-away launcher serves as a shipping-carrying case and can be carried over the shoulder by the soldier through underbrush and over rough terrain. The missile utilizes a solid propellant rocket motor which burns out before the missile leaves the launcher. The weapon is effective against tanks, bunkers, and other field fortifications.

**NIKE-AJAX** - Surface-to-air supersonic antiaircraft guided missile. It is a two-stage missile using a powerful solid propellant booster and a liquid fueled second-stage rocket motor. Nike-Ajax is capable of intercepting and destroying conventional type aircraft regardless of evasive action. It has a range of 25 miles and can rise to an altitude of 50,000 feet, carrying a high explosive warhead. Nike-Ajax was the first antiaircraft missile to guard U. S. cities and defense installations.

**NIKE-HERCULES** - Surface-to-air antiaircraft guided missile. It is a two-stage solid propellant missile and has high explosive or nuclear capabilities. Nike-Hercules is capable of destroying the most advanced high performance aircraft regardless of evasive actions. Utilizing extremely sophisticated acquisition, target track, and missile track radar, Nike-Hercules has a range of 75 miles and is capable of rising to altitudes in excess of 100,000 feet.

**NIKE-ZEUS** - the Army's proposed solution for the defense of the U. S. by attack by intercontinental ballistic missiles. The weapon system is the only anti-ICBM missile system in the advanced stages of development today. Nike-Zeus uses highly accurate acquisition radar, scanning thousands of miles of space, to detect oncoming ICBM warheads. When the target is acquired, tracking radar takes over, relays information to high speed computers which determine the path of the warhead, determine the point of intercept, and fire the killer missile at the precise moment. Nike-Zeus is a three-stage missile, utilizing powerful solid propellant rocket motors in order to rise to extreme altitudes at tremendous speeds to destroy the target at a safe distance from the defended area.

**LACROSSE** - Surface-to-surface Artillery guided missile for support of ground combat troops. It uses a solid propellant rocket motor and is sufficiently accurate for destroying hard point targets in the field. Lacrosse has atomic and non-atomic capabilities and will replace some conventional Artillery units. The missile is mounted on launcher on a standard Army truck.

**HAWK** - Surface-to-air guided missile. The Army's "Homing-All-The-Way Killer," was designed to defend against low flying, high performance enemy aircraft. The weapon system uses continuous beam radar to detect low flying enemy attackers flying in the blind zone of conventional radar. Hawk missile's homing guidance locks on to the attacker and follows it for the kill. Hawk missiles, using solid propellant rocket motor, can be launched in rapid sequence from triple-mount launcher.

**REDEYE** - Surface-to-air man-portable, individual soldier fired anti-aircraft missile system. The missile, fired from the shoulder from a combination launcher-shipping container, uses an infrared guidance system. It is aimed at an attacking enemy aircraft and when the missile locks on to the target, it is fired and follows the target to the kill, regardless of evasive action.

**MAULER** - Surface-to-air guided missile system for defense of ground combat troops from attack by high performance aircraft and short range ballistic missiles. Still in the development stage, Mauler is designed to move with today's modern, fast moving Army. Each Mauler fire unit will be contained entirely on a self-propelled vehicle of standard Army design.

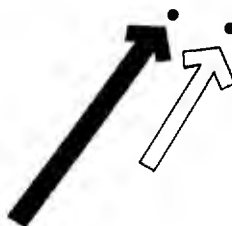
**SHILLELAGH** - Surface-to-surface guided missile for close-in support of troops. Still in the development stage, it will greatly increase firepower against armor as well as troops and field fortifications. Vehicle mounting will be one application.

**SS-10** - Surface-to-surface guided missile. It is a wire guided missile, utilizing a solid propellant rocket motor, for knocking out tanks and other armor on the battlefield. SS-10 is guided to its target through visual observation by a control device operated by one soldier. Guide wires attached to the controlling devices on the missile and to the man-operated control device unreel in flight. SS-10 can be hand-carried on the ground, dropped by parachute, fired on the ground, from a vehicle, helicopter or airplane.

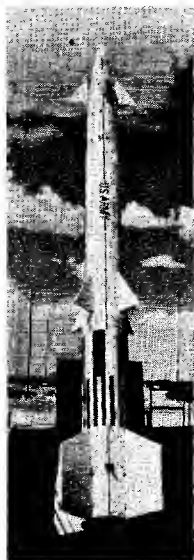
**SS-11** - Surface-to-surface guided missile . . . bigger brother to the SS-10. The missile has twice the range, greater speed and packs a greater punch than the SS-10. SS-11 is being evaluated for possible deployment from helicopters.

**FABMDS** - Field Army Ballistic Missile Defense System. Now undergoing extensive feasibility study has as its objective the defense of troops in the field against attack by enemy ballistic missiles.

**ENTAC** - Surface-to-surface wire guided missile, deriving its name from the contraction of the French identifying description, ENgin Teleguided Anti-Char. ENTAC is a solid propellant missile for use against enemy tanks and other armored combat vehicles. It will replace the SS-10.



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NIKE ZEUS  
ICBM MISSILE KILLER

PERSHING FOUR STAR MISSILE



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MISSILES...

behind the

MAN...

behind

YOU !

